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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,608	11/29/2001	Akira Tsuboyama	684.3292	2296
5514	7590	05/11/2005	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO			YAMNITZKY, MARIE ROSE	
30 ROCKEFELLER PLAZA			ART UNIT	
NEW YORK, NY 10112			PAPER NUMBER	

1774

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

ML

Office Action Summary

Application No.

09/995,608

Applicant(s)

TSUBOYAMA ET AL.

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 16 and 18-24 is/are rejected.
- 7) ☒ Claim(s) 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. This Office action is in response to applicant's amendment received February 22, 2005, which cancels claims 1-14 and adds claims 15-24.

Claims 15-24 are pending.

2. All rejections set forth in the Office action mailed October 20, 2004 are rendered moot by claim cancellation.

The previously applied published application of Tsuboyama et al. (US 2002/0068190 A1), which discloses platinum compounds, is not applicable to the present claims, all of which are limited to iridium compounds.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 15, 16 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al. (US 2001/0019782 A1).

Igarashi et al. disclose iridium metal coordination compounds for use as light emitting compounds in organic electroluminescent devices.

The compound represented by formula (1-23) in Igarashi's published application is similar to the compound defined in present independent claim 15, differing in that the compound

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of formula (1-23) is a compound of the formula shown in claim 15 wherein X is CH₂, while claim 15 requires X to be O, C=O, CF₂ or N-R. Igarashi's compound of formula (1-23) is a specific example of a compound having a partial structure represented by formula (4) as taught, for example, in paragraphs [0023]-[0024] of the published application. Examples of, and preferences for, the variables of formula (4) are set forth in paragraphs [0055]-[0057] of the published application.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to make compounds similar in structure to the specific compounds disclosed by Igarashi et al. with the expectation that compounds similar in structure would be suitable for Igarashi's purposes. Based on Igarashi's teachings in paragraphs [0056]-[0057], it would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to make compounds similar to the compound of formula (1-23) having a divalent group such as present O or N-R in place of the divalent group CH₂ since each of these divalent groups is taught in paragraph [0056], and O is among the preferred divalent groups taught in paragraph [0057]. One of ordinary skill in the art also would have reasonably expected that compounds similar to Igarashi's compound of formula (1-23) having a fluorine in place of each of the two hydrogens of the divalent linking group (i.e. having CF₂ in place of CH₂) would have similar properties and could be used for the same purpose based on Igarashi's disclosure in paragraph [0056] that Lⁿ¹ may represent -C(R¹³¹)(R¹³²)- in which R¹³¹ and R¹³² may represent a hydrogen atom or a halogen atom.

The present application claims priority of three Japanese applications, one of which was filed prior to the U.S. filing date of Igarashi's application. Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

5. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson et al. (US 2002/0034656 A1).

Thompson et al. disclose phosphorescent iridium organometallic complexes for use as light emitting compounds in organic electroluminescent devices.

Thompson et al. teach that the complexes may be of the formula $LL'L''M$ wherein each of the L ligands is a bidentate, monoanionic ligand. The bidentate ligands may be the same or different. For example, see paragraph [0052], Fig. 50 and claims 84-88. Thompson et al. disclose benzothienylpyridine ligands and phenylpyridine ligands as useful bidentate, monoanionic ligands for iridium compounds of Thompson's invention. 8-hydroxyquinolate and thienylpyridine ligands are also disclosed as useful ligands for iridium compounds of Thompson's invention. For example, see Fig. 31, Fig. 50, paragraph [0183] and claims 69-71.

Thompson et al. do not disclose a specific example of an iridium complex having two phenylpyridine ligands and one 8-hydroxyquinolate ligand (a compound represented by formula (1) in present claim 22), an iridium complex having one benzothienylpyridine ligand and two 8-hydroxyquinolate ligands (a compound represented by formula (2) in present claim 22), an iridium complex having two thienylpyridine ligands and one benzothienylpyridine ligand (a

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compound represented by formula (3) in present claim 22), or an iridium complex having two benzothienylpyridine ligands and one phenylpyridine ligand (a compound represented by formula (4) in present claim 22). However, one of ordinary skill in the art at the time of the invention would have reasonably expected that iridium complexes comprising these combination of ligands would be phosphorescent and would be suitable for use as light emitting compounds in an organic electroluminescent device based on Thompson's teachings. It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to make iridium complexes comprising combinations of ligands taught as useful by Thompson et al. in order to provide a variety of complexes suitable for use in Thompson's device.

6. Claim 17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for Art Unit 1774 is (703) 872-9306 for all official faxes. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
May 10, 2005



**MARIE YAMNITZKY
PRIMARY EXAMINER**

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